

ABSTRACT

BACKGROUND:

Bleeding from esophageal varices (EVs) is a life-threatening complication of cirrhosis secondary to portal hypertension. Prompt detection and appropriate prophylactic therapy is advocated for reducing the occurrence of variceal bleeding. Current guidelines recommend all cirrhotic patients should undergo upper gastrointestinal endoscopy (UGI scopy) screening for detection of esophageal varices. This imposes heavy burden on endoscopy units and decreases patient compliance. Thereby, the need for non-endoscopic predictors of esophageal varices is warranted.

AIM:

To determine the utility of splenic ARFI as non-invasive predictor for the detection of esophageal varices and to assess the efficacy of splenic ARFI in differentiating low grade from high grade esophageal varices

MATERIALS AND METHODS:

This prospective case control study involved 100 patients diagnosed with chronic liver parenchymal disease who had undergone routine UGI scopy screening for esophageal varices (EVs). 50 cirrhotic patients with EVs and 50 cirrhotic patients without EVs were included. B mode ultrasonography and Acoustic Force Impulse Imaging (ARFI) elastography was done with Siemens Acuson S2000TM / Acuson S3000TM ultrasound systems with 6C1 / 4C1

curvilinear transducer. Demographic, clinical, bio-chemical, ultrasonography and elastography parameters were recorded. Independent sample 't' test and Chi-square test were performed to identify predictors of EVs and high grade EVs. Cut-offs of significant indicators were determined by ROC analysis.

RESULT:

Significant correlation between cirrhotics with EVs and without EVs groups was obtained with spleen ARFI, MELD, PSR and Spleen size. ROC analysis showed that spleen ARFI cut off of ≥ 3.16 m/s (AUROC: 0.906) precisely detects EVs with 94% sensitivity and 92% specificity. Diagnostic accuracy of spleen ARFI in detection of EVs is the highest of all the noninvasive parameters analyzed in this study. Furthermore, spleen ARFI exclusively shows significant relationship with the severity of EVs. The optimal cut off of ≥ 3.29 m/s (AUROC: 0.874) can confidentially differentiate low grade vs high grade varices in cirrhotics with 85% sensitivity and 100% specificity.

CONCLUSION:

Spleen ARFI can be used as a noninvasive tool in the detection of esophageal varices and high grade esophageal varices with high degree of diagnostic accuracy in chronic liver parenchymal disease patients.

Keywords: Spleen ARFI, Esophageal varices, cirrhotics, non-invasive